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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/1
19304D MLRS, MISSILE NUMBER BN-049, ROUND NUMBER V-188/MD-42. 1--ETC(U)
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DR 1207
Sept 1981

AD

LEVEL II

(12)

AD A106697

METEOROLOGICAL DATA REPORT

19304D MLRS
Missile Number BN-049
Round Number V-188/MD-42
11 Sept 1981

by

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Program Support Coordinator
Phone Number (505) 679-9568
AVN Number 349-9568

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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECONI

UNITED STATES ARMY ELECTRONICS COMMAND

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(1) Meteorological data rept,

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| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19304D MLRS, Missile Number BN-049, Round Number V-188/MD-42 presented in tabular form. | | |

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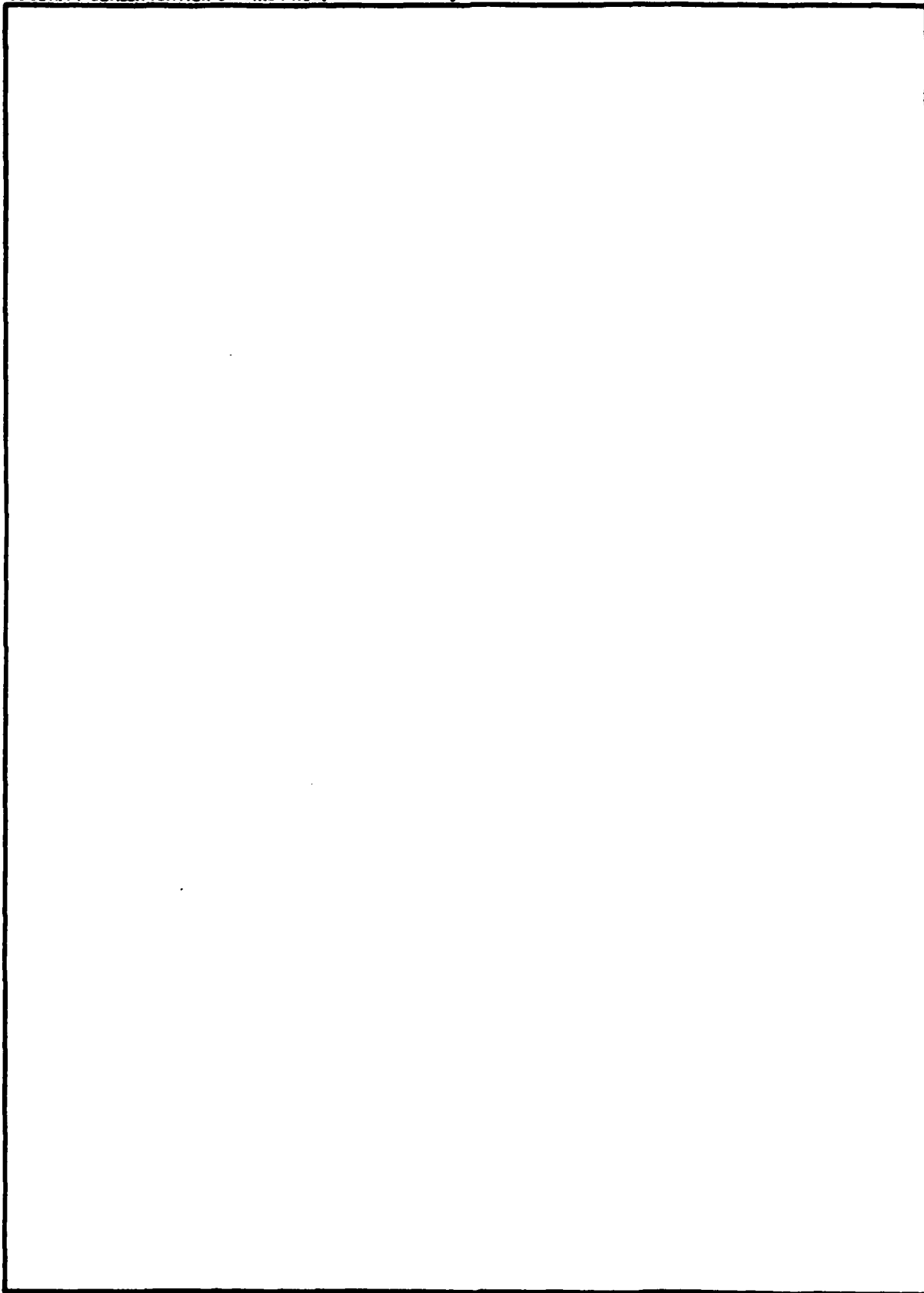
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INTRODUCTION

19304D MLRS, Missile Number BN-049, Round Number V-188/MD-42, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0904:24 MDT, 11 Sept 1981. The scheduled launch time was 0900 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations.

a. Surface:

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind speed and direction, and cloud cover were made at the LC-33 Met Sites at T-0 minutes.

(2) Anemometer data were provide from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air:

(1) Low level wind data were obtained from Pilot-Balloon observations at:

SITE AND ALTITUDE

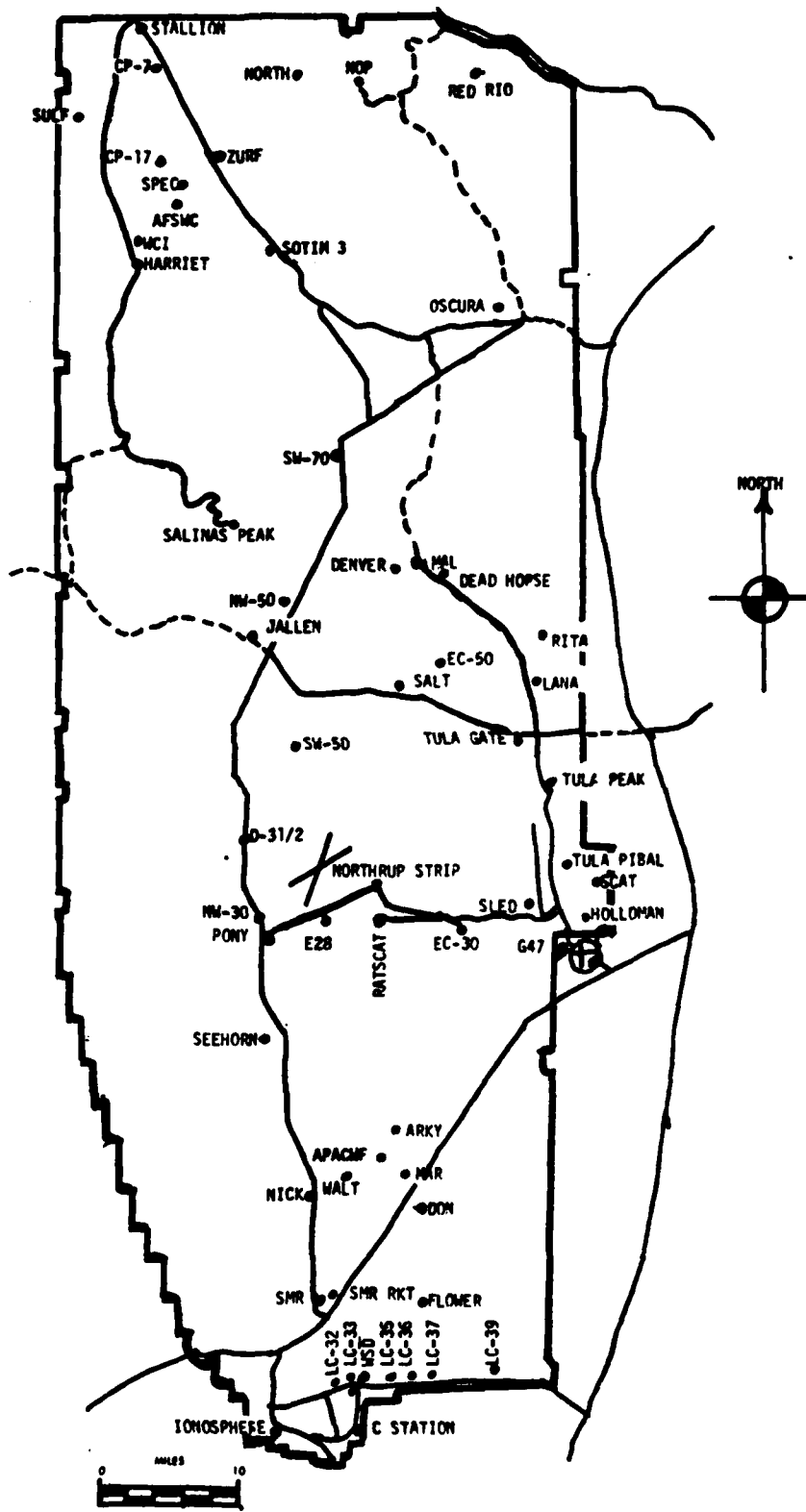
| | |
|-------|------|
| LC-33 | 2 KM |
| NICK | 2 KM |

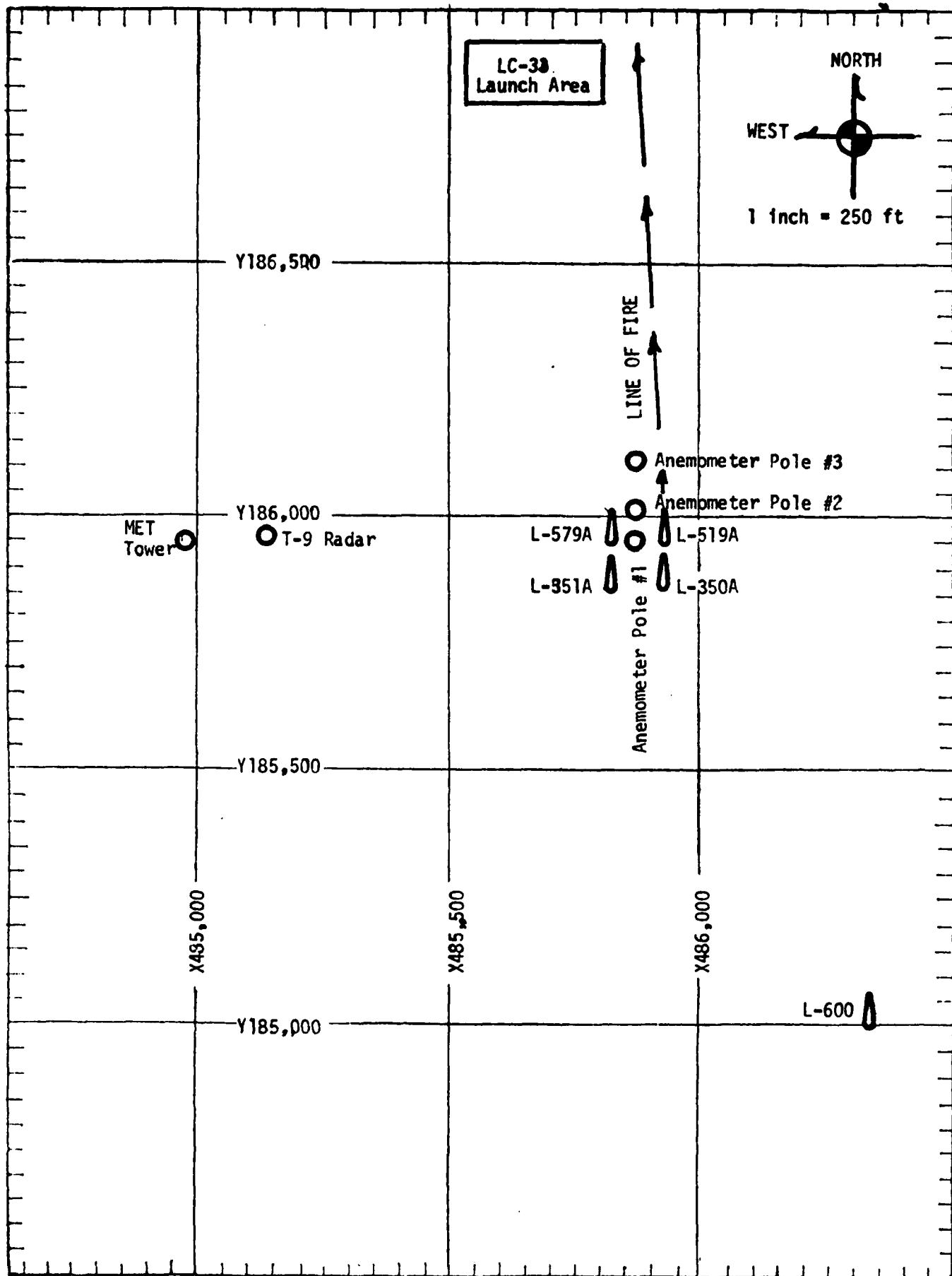
(2) Air structure data (rawinsonde) were collected at the following Met Sites:

SITE AND TIME

| | |
|-------|----------|
| WSD | 0600 MDT |
| LC-37 | 0700 MDT |
| WSD | 0800 MDT |
| LC-37 | 0904 MDT |

WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

| TABLE 1 | | | | | | | | | |
|---------------|--|----------|--|---------------|--|---------------|--|-------------------|--|
| STATION LC-33 | | | | | | | | | |
| DATE 11 | | 1981 | | X= 485,135.76 | | Y= 185,919.24 | | H= 3,988.57 | |
| DAY | | MONTH | | YEAR | | DIRECTION | | WIND | |
| TIME | | PRESSURE | | TEMPERATURE | | DEW POINT | | RELATIVE HUMIDITY | |
| M D I | | mbs | | OF | | OF | | % | |
| | | | | OC | | OC | | gm/m ³ | |
| | | | | | | | | kts | |
| | | | | | | | | CHARACTER | |
| | | | | | | | | kts | |
| | | | | | | | | VISIBIL-ITY | |
| 0904 | | 883.5 | | 24.4 | | 14.6 | | 54 | |
| | | | | | | | | 1033 | |
| | | | | | | | | CALM | |
| | | | | | | | | 40 | |
| | | | | | | | | | |
| | | | | | | | | | |

| OBSTRUCTIONS TO VISIBILITY | CLOUDS | | | | | | REMARKS | | |
|----------------------------|-----------|------|-----------|------|-----------|------|---------|--------|-------|
| | 1st LAYER | | 2nd LAYER | | 3rd LAYER | | | | |
| | AMT | TYPE | AMT | TYPE | AMT | TYPE | | | |
| | 0 | CU | 6 | AC | 12,000 | 1 | CI | 25,000 | CU NE |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

PSYCHROMETRIC COMPUTATION

| | | | |
|-----------------|------|------|--|
| TIME: | MDT | 0904 | |
| DRY BULB TEMP. | 24.4 | | |
| WET BULB TEMP. | 17.8 | | |
| WET BULB DEPR. | 6.6 | | |
| DEW POINT | 14.6 | | |
| RELATIVE HUMID. | 54 | | |

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

| POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL | | | POLE #2 X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL | | | POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL | | |
|---|------------|--------------|---|------------|--------------|---|------------|--------------|
| T-TIME SEC | DIR DEG | SPEED KTS | T-TIME SEC | DIR DEG | SPEED KTS | T-TIME SEC | DIR DEG | SPEED KTS |
| T-30 | C A | L M | T-30 | 340 | 01 | T -30 | C A | L M |
| T-20 | C A | L M | T-20 | 340 | 01 | T -20 | C A | L M |
| T-10 | C A | L M | T-10 | 340 | 01 | T -10 | C A | L M |
| T0.0 | C A | L M | T0.0 | 340 | 01 | T 0.0 | C A | L M |
| T+10 | C A | L M | T+10 | 340 | 01 | T +10 | C A | L M |

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

| LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base) | | | LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base) | | |
|--|---------|-----------|--|---------|-----------|
| T-TIME SEC | DIR DEG | SPEED KTS | T-TIME SEC | DIR DEG | SPEED KTS |
| T-30 | 050 | 01 | T-30 | C A L M | |
| T-20 | C A L M | | T-20 | C A L M | |
| T-10 | C A L M | | T-10 | C A L M | |
| T0.0 | C A L M | | T0.0 | C A L M | |
| T+10 | 036 | 01 | T+10 | C A L M | |

| LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base) | | | LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base) | | |
|---|---------|-----------|--|---------|-----------|
| T-TIME SEC | DIR DEG | SPEED KTS | T-TIME SEC | DIR DEG | SPEED KTS |
| T-30 | C A L M | | T-30 | C A L M | |
| T-20 | C A L M | | T-20 | C A L M | |
| T-10 | C A L M | | T-10 | C A L M | |
| T0.0 | C A L M | | T0.0 | C A L M | |
| T+10 | C A L M | | T+10 | C A L M | |

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA
DATE 11 Sept 1981

SITE: LC-33
TIME: 0904 MDT
WSM COORDINATES:
X= 484,837.34
Y= 184,124.44
H= 3,975.60

SITE: NICK
TIME: 0904 MDT
WSM COORDINATES:
X= 470,734.56
Y= 255,775.64
H= 4,126.57

| LAYER MIDPOINT METERS AGL | DIRECTION DEGREES | | SPEED KNOTS | |
|------------------------------|----------------------|---|----------------|---|
| | C | A | L | M |
| SURFACE | | | | |
| 150 | 021 | | 04 | |
| 210 | 013 | | 05 | |
| 270 | 005 | | 06 | |
| 330 | 360 | | 08 | |
| 390 | 360 | | 08 | |
| 500 | 006 | | 08 | |
| 650 | 029 | | 06 | |
| 800 | 037 | | 05 | |
| 950 | 015 | | 03 | |
| 1150 | 305 | | 04 | |
| 1350 | 343 | | 06 | |
| 1550 | 342 | | 07 | |
| 1750 | 342 | | 08 | |
| 2000 | 327 | | 07 | |

Data obtained from Double-Theodolite
Tracked Pilot-Balloon Observations.

| LAYER MIDPOINT METERS AGL | DIRECTION DEGREES | | SPEED KNOTS | |
|------------------------------|----------------------|---|----------------|---|
| | C | A | L | M |
| SURFACE | | | | |
| 150 | 319 | | 02 | |
| 210 | 318 | | 03 | |
| 270 | 317 | | 04 | |
| 330 | 317 | | 06 | |
| 390 | 318 | | 06 | |
| 500 | 321 | | 06 | |
| 650 | 355 | | 04 | |
| 800 | 021 | | 04 | |
| 950 | 025 | | 05 | |
| 1150 | 354 | | 06 | |
| 1350 | 318 | | 06 | |
| 1550 | 333 | | 06 | |
| 1750 | 347 | | 08 | |
| 2000 | 337 | | 08 | |

Data obtained from Single-Theodolite
Tracked Pilot-Balloon Observation.

AIMING AND T-TIME COMPUTER MET MESSAGES 11 Sept 1981

| WSD 0600 MDT | LC-37 0700 MDT | WSD 0800 MDT | LC-37 0904 MDT |
|-------------------|-------------------|-------------------|-------------------|
| METCM1324064 | METCM1324063 | METCM1324064 | METCM1324881 |
| 111200122881 | 111300124880 | 111400122882 | 111510124881 |
| 00036002 29140881 | 00000000 29130880 | 00036001 29360882 | 00000000 29460881 |
| 01033010 29430871 | 01025013 29280869 | 01129005 29470872 | 01017006 29510871 |
| 02019010 29600846 | 02018007 29480845 | 02014007 29500847 | 02005007 29560846 |
| 03548007 29380808 | 03617006 29310806 | 03060007 29330809 | 03034007 29330807 |
| 04497009 29010762 | 04529006 28990760 | 04561006 29070763 | 04554005 29070762 |
| 05537009 28650718 | 05560009 28610717 | 05603009 28720719 | 05604007 28690718 |
| 06567006 28260676 | 06577004 28170675 | 06587006 28310677 | 06557003 28250676 |
| 07253003 27830637 | 07222003 27720635 | 07244002 27880637 | 07226004 27820636 |
| 08374005 27410598 | 08352006 27310597 | 08389006 27460599 | 08315005 27400598 |
| 09437008 27040562 | 09407007 26990560 | 09417006 27090563 | 09423004 27060562 |
| 10447012 26810528 | 10448011 26780526 | 10422010 26780529 | 10433009 26760527 |
| 11411017 26580495 | 11419014 26490493 | 11411016 26560496 | 11418014 26530495 |
| 12421019 26070449 | 12411016 25970447 | 12391015 26050450 | 12389013 26100449 |

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

SIGNIFICANT LEVEL DATA
25400.0592
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL
11 SEP. 81
ASCENSION NO. 592

TABLE 6

| PRESSURE MILLIHARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE | | REL. HUM. PERCENT |
|-----------------------|-----------------------------------|---|-------|----------------------|
| | | 16.2 | 14.7 | |
| 880.9 | 3989.0 | 16.2 | 14.7 | 91.0 |
| 864.4 | 4523.7 | 21.2 | 14.8 | 67.0 |
| 850.0 | 5002.5 | 21.0 | 12.7 | 59.0 |
| 832.2 | 5604.5 | 20.4 | 10.8 | 54.0 |
| 700.0 | 10434.4 | 11.0 | -8 | 44.0 |
| 625.6 | 13474.1 | 3.2 | -5.4 | 53.0 |
| 566.8 | 16076.6 | -2.8 | -10.8 | 33.0 |
| 564.3 | 16191.8 | -2.7 | -26.4 | 14.0 |
| 542.4 | 17220.5 | -4.1 | -24.8 | 18.0 |
| 526.2 | 18004.7 | -5.7 | -14.0 | 52.0 |
| 510.6 | 18780.8 | -6.0 | -11.1 | 67.0 |
| 500.0 | 19320.4 | -7.3 | -11.6 | 71.0 |
| 494.8 | 19588.4 | -7.6 | -14.4 | 58.0 |
| 468.4 | 20985.0 | -10.7 | -15.6 | 67.0 |
| 463.8 | 21234.5 | -11.4 | -19.9 | 49.0 |
| 456.2 | 21650.7 | -12.4 | -24.0 | 37.0 |
| 448.8 | 22061.0 | -13.5 | -20.8 | 54.0 |
| 446.1 | 22212.1 | -13.7 | -20.8 | 32.0 |
| 439.8 | 22567.6 | -14.0 | -29.3 | 26.0 |
| 432.0 | 23015.5 | -13.0 | -32.8 | 17.0 |
| 400.0 | 24928.0 | -17.7 | -30.7 | 17.0 |
| 375.6 | 26464.4 | -22.2 | -37.6 | 23.0 |
| 361.8 | 27365.6 | -24.7 | -34.9 | 38.0 |
| 355.0 | 27819.9 | -25.2 | -27.1 | 84.0 |
| 342.0 | 28710.1 | -26.4 | -28.9 | 79.0 |

STATION ALTITUDE 3989.00 FEET MSL
11 SEP. 81 0600 HRS MDT
ASCENSION NO. 592

UPPER AIR DATA
2540020592
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 7

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES (TN) | SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|--|----------------|---------------------------|
| 3989.0 | 880.9 | 16.2 | 91.0 | 1052.9 | 665.1 | 20.0 | 1.9 | 1.000311 |
| 4000.0 | 880.6 | 16.3 | 90.5 | 1052.1 | 665.2 | 19.3 | 2.0 | 1.000310 |
| 4500.0 | 865.1 | 21.0 | 68.1 | 1017.1 | 670.6 | 1.4 | 3.4 | 1.000301 |
| 5000.0 | 850.1 | 21.0 | 59.0 | 1000.2 | 670.4 | 354.5 | 5.0 | 1.000287 |
| 5500.0 | 835.3 | 20.5 | 54.9 | 984.9 | 669.6 | 351.0 | 6.7 | 1.000278 |
| 6000.0 | 820.5 | 19.6 | 53.2 | 970.8 | 668.5 | 332.0 | 6.7 | 1.000270 |
| 6500.0 | 805.9 | 18.7 | 52.1 | 957.1 | 667.3 | 305.5 | 7.2 | 1.000263 |
| 7000.0 | 791.6 | 17.7 | 51.1 | 943.5 | 666.0 | 294.3 | 7.8 | 1.000257 |
| 7500.0 | 777.6 | 16.7 | 50.1 | 930.2 | 664.8 | 286.6 | 8.4 | 1.000250 |
| 8000.0 | 763.8 | 15.7 | 49.0 | 917.0 | 663.6 | 281.7 | 8.7 | 1.000244 |
| 8500.0 | 750.2 | 14.8 | 48.0 | 904.0 | 662.4 | 285.0 | 9.3 | 1.000238 |
| 9000.0 | 736.9 | 13.8 | 47.0 | 891.2 | 661.2 | 290.1 | 9.8 | 1.000233 |
| 9500.0 | 723.8 | 12.8 | 45.9 | 878.6 | 660.0 | 298.9 | 9.1 | 1.000227 |
| 10000.0 | 711.0 | 11.8 | 44.9 | 866.2 | 658.8 | 308.0 | 7.9 | 1.000222 |
| 10500.0 | 690.3 | 10.8 | 44.2 | 854.0 | 657.5 | 319.7 | 6.3 | 1.000217 |
| 11000.0 | 685.5 | 9.5 | 44.2 | 842.2 | 656.0 | 320.0 | 5.4 | 1.000213 |
| 11500.0 | 675.0 | 8.3 | 47.2 | 830.6 | 654.5 | 317.3 | 4.2 | 1.000210 |
| 12000.0 | 660.6 | 7.0 | 48.6 | 819.3 | 653.0 | 309.0 | 1.7 | 1.000206 |
| 12500.0 | 640.5 | 5.7 | 50.1 | 808.0 | 651.4 | 176.1 | .6 | 1.000202 |
| 13000.0 | 636.7 | 4.4 | 51.6 | 797.0 | 649.9 | 148.8 | 2.1 | 1.000199 |
| 13500.0 | 625.0 | 3.1 | 52.8 | 786.1 | 648.3 | 160.1 | 2.9 | 1.000195 |
| 14000.0 | 615.2 | 2.0 | 49.0 | 774.8 | 646.9 | 188.7 | 3.8 | 1.000190 |
| 14500.0 | 601.7 | .8 | 45.1 | 763.7 | 645.4 | 212.5 | 4.7 | 1.000185 |
| 15000.0 | 590.4 | -3 | 41.3 | 752.7 | 644.0 | 228.9 | 5.8 | 1.000180 |
| 15500.0 | 579.3 | -1.5 | 37.4 | 741.9 | 642.6 | 241.8 | 6.5 | 1.000176 |
| 16000.0 | 560.4 | -2.6 | 33.6 | 731.2 | 641.1 | 246.0 | 7.2 | 1.000172 |
| 16500.0 | 557.6 | -3.1 | 15.2 | 719.1 | 640.3 | 242.2 | 7.9 | 1.000164 |
| 17000.0 | 547.0 | -3.8 | 17.1 | 707.1 | 639.5 | 246.1 | 9.2 | 1.000162 |
| 17500.0 | 536.6 | -4.7 | 30.1 | 695.6 | 638.6 | 251.1 | 10.8 | 1.000162 |
| 18000.0 | 526.3 | -5.7 | 51.8 | 684.5 | 637.6 | 250.5 | 12.4 | 1.000163 |
| 18500.0 | 516.2 | -5.9 | 61.6 | 671.6 | 637.5 | 247.3 | 13.9 | 1.000162 |
| 19000.0 | 506.3 | -6.5 | 68.6 | 660.2 | 636.7 | 236.8 | 15.4 | 1.000161 |
| 19500.0 | 490.5 | -7.5 | 62.3 | 650.0 | 635.5 | 230.2 | 17.0 | 1.000156 |
| 20000.0 | 480.9 | -8.5 | 60.7 | 639.9 | 634.2 | 227.7 | 18.5 | 1.000153 |
| 20500.0 | 477.4 | -9.6 | 63.9 | 630.2 | 632.9 | 228.4 | 18.9 | 1.000151 |
| 21000.0 | 460.1 | -10.7 | 65.9 | 620.6 | 631.5 | 231.6 | 18.3 | 1.000148 |
| 21500.0 | 450.9 | -12.0 | 41.3 | 611.4 | 629.8 | 234.0 | 18.2 | 1.000142 |
| 22000.0 | 449.9 | -13.3 | 51.5 | 602.7 | 628.2 | 235.3 | 18.3 | 1.000141 |
| 22500.0 | 441.0 | -13.9 | 27.1 | 592.4 | 627.4 | 237.7 | 18.5 | 1.000135 |
| 23000.0 | 432.3 | -15.0 | 17.3 | 578.7 | 628.4 | 241.2 | 18.9 | 1.000131 |

STATION ALTITUDE 3,989.00 FEET MSL
11 SEP. 81
ASCENSION, IO. 592
0600 HRS MDT

UPPER AIR DATA
2540020392
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 7 CONT

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES (TN) | SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|--|----------------|---------------------------|
| 23500.0 | 425.7 | -14.2 | 17.0 | 569.4 | 627.0 | 242.2 | 18.3 | 1.000129 |
| 24000.0 | 415.2 | -15.4 | 17.0 | 561.1 | 625.5 | 241.8 | 17.2 | 1.000127 |
| 24500.0 | 400.9 | -16.6 | 17.0 | 552.6 | 624.0 | 234.8 | 15.4 | 1.000125 |
| 25000.0 | 398.8 | -17.9 | 17.3 | 544.2 | 622.5 | 229.8 | 14.2 | 1.000123 |
| 25500.0 | 390.7 | -19.4 | 19.2 | 536.2 | 620.7 | 229.5 | 13.3 | 1.000121 |
| 26000.0 | 382.8 | -20.8 | 21.2 | 528.4 | 618.9 | 229.1 | 13.8 | 1.000119 |
| 26500.0 | 375.0 | -22.3 | 23.6 | 520.7 | 617.1 | 228.7 | 14.8 | 1.000117 |
| 27000.0 | 367.3 | -23.7 | 31.9 | 512.8 | 615.4 | 230.7 | 16.1 | 1.000116 |
| 27500.0 | 359.8 | -24.8 | 51.6 | 504.5 | 614.0 | | | 1.000115 |
| 28000.0 | 352.3 | -25.4 | 83.0 | 495.2 | 613.4 | | | 1.000114 |
| 28500.0 | 345.0 | -26.1 | 80.2 | 486.2 | 612.5 | | | 1.000112 |

STATION ALTITUDE 3989.00 FEET MSL
 11 SEP. 61 0600 HRS MDT
 ASCENSION NO. 592

MANDATORY LEVELS
 2540020592
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 8

| PRESSURE GEOPOTENTIAL | | TEMPERATURE | | REL. HUM. | | WIND DATA | |
|-----------------------|--------|----------------|------------------------|-----------|--|--------------------------|----------------|
| MILLIBARS | FEET | AIR DEGREES | DEWPOINT CENTIGRADE | PERCENT | | DIRECTION DEGREES(TN) | SPEED KNOTS |
| 850.0 | 4999. | 21.0 | 12.7 | 59. | | 354.5 | 5.0 |
| 800.0 | 6715. | 18.3 | 8.2 | 52. | | 300.4 | 7.4 |
| 750.0 | 8520. | 14.7 | 3.9 | 48. | | 285.2 | 9.4 |
| 700.0 | 10424. | 11.0 | -0.8 | 44. | | 317.7 | 6.5 |
| 650.0 | 12435. | 5.9 | -3.8 | 50. | | 188.8 | .5 |
| 600.0 | 14566. | .7 | -10.0 | 45. | | 215.5 | 4.8 |
| 550.0 | 16838. | -3.6 | -25.3 | 17. | | 244.3 | 4.7 |
| 500.0 | 19293. | -7.3 | -11.6 | 71. | | 231.3 | 16.5 |
| 450.0 | 21960. | -13.3 | -21.2 | 51. | | 235.3 | 18.3 |
| 400.0 | 24886. | -17.7 | -36.7 | 17. | | 229.8 | 14.3 |
| 350.0 | 28107. | -25.7 | -27.8 | 82. | | | |

STATION ALTITUDE 4051.37 FEET MSL
11 SEP. 81
ASCENSION NO. 201

SIGNIFICANT LEVEL DATA
25401.0201
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.51232 LONG DEG

TABLE 9

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE | | REL. HUM. PERCENT |
|-----------------------|-----------------------------------|----------------|------------------------|----------------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | |
| 079.6 | 4051.4 | 16.2 | 14.7 | 91.0 |
| 861.2 | 4647.3 | 19.4 | 14.4 | 73.0 |
| 850.0 | 5018.9 | 20.4 | 13.4 | 64.0 |
| 822.0 | 5969.5 | 19.6 | 10.6 | 56.0 |
| 753.0 | 8433.8 | 15.4 | 4.5 | 48.0 |
| 700.0 | 10451.2 | 10.6 | .1 | 48.0 |
| 650.8 | 12427.7 | 4.9 | -2.9 | 57.0 |
| 597.4 | 14704.9 | .1 | -11.3 | 42.0 |
| 571.8 | 15852.2 | -3.1 | -13.1 | 46.0 |
| 546.4 | 17034.1 | -3.7 | -15.9 | 38.0 |
| 526.6 | 17989.2 | -5.7 | -25.6 | 19.0 |
| 500.0 | 19321.0 | -7.8 | -10.6 | 80.0 |
| 465.4 | 21144.7 | -11.5 | -13.6 | 84.0 |
| 434.4 | 22870.5 | -15.9 | -17.6 | 87.0 |
| 427.2 | 23286.0 | -15.0 | -21.6 | 57.0 |
| 416.6 | 23910.2 | -16.1 | -28.0 | 35.0 |
| 400.0 | 24913.5 | -18.4 | -27.8 | 43.0 |
| 369.2 | 26863.3 | -23.2 | -34.0 | 36.0 |
| 362.4 | 27310.0 | -24.8 | -34.4 | 40.0 |
| 348.8 | 28224.5 | -25.7 | -29.7 | 69.0 |
| 335.4 | 29156.3 | -27.4 | -33.6 | 55.0 |
| 300.0 | 31761.6 | -34.6 | -41.9 | 47.0 |

STATION ALTITUDE 4051.37 FEET MSL
11 SEP. 61 0700 HRS MDT
ASCENSION NO. 201

UPPER AIR DATA
2540100201
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 10

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE | | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|----------------------------|---------------------------|----------------|---------------------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | | | | DIRECTION DEGREES (TN) | SPEED KNOTS | |
| 4051.4 | 879.6 | 16.2 | 14.7 | 91.0 | 1051.4 | 665.1 | .0 | .0 | 1.000310 |
| 4500.0 | 865.7 | 18.6 | 14.6 | 77.4 | 1026.2 | 667.9 | 6.6 | 1.3 | 1.000303 |
| 5000.0 | 850.6 | 20.3 | 13.4 | 64.5 | 1002.6 | 669.7 | 6.6 | 2.8 | 1.000291 |
| 5500.0 | 835.7 | 20.0 | 12.0 | 60.0 | 986.8 | 669.1 | 6.6 | 4.3 | 1.000282 |
| 6000.0 | 821.1 | 19.5 | 10.5 | 55.9 | 971.5 | 668.5 | 6.6 | 5.8 | 1.000273 |
| 6500.0 | 806.6 | 18.7 | 9.3 | 54.3 | 957.6 | 667.4 | 346.5 | 4.8 | 1.000266 |
| 7000.0 | 792.4 | 17.8 | 8.0 | 52.7 | 943.8 | 666.3 | 317.8 | 4.6 | 1.000259 |
| 7500.0 | 778.4 | 17.0 | 6.8 | 51.0 | 930.2 | 665.2 | 305.7 | 5.5 | 1.000252 |
| 8000.0 | 764.7 | 16.1 | 5.6 | 49.4 | 916.7 | 664.1 | 301.9 | 6.4 | 1.000245 |
| 8500.0 | 751.2 | 15.2 | 4.3 | 48.0 | 903.6 | 663.0 | 307.1 | 7.2 | 1.000239 |
| 9000.0 | 737.7 | 14.1 | 3.2 | 48.0 | 891.3 | 661.5 | 311.4 | 8.0 | 1.000234 |
| 9500.0 | 724.5 | 12.9 | 2.1 | 48.0 | 879.2 | 660.1 | 315.0 | 8.9 | 1.000229 |
| 10000.0 | 711.5 | 11.7 | 1.0 | 48.0 | 867.2 | 658.6 | 316.4 | 9.0 | 1.000224 |
| 10500.0 | 698.7 | 10.5 | -0 | 48.2 | 855.4 | 657.2 | 316.8 | 8.5 | 1.000219 |
| 11000.0 | 686.0 | 9.0 | -7 | 50.5 | 844.2 | 655.5 | 319.0 | 6.5 | 1.000216 |
| 11500.0 | 673.4 | 7.6 | -1.4 | 52.8 | 833.1 | 653.7 | 325.1 | 4.1 | 1.000212 |
| 12000.0 | 661.1 | 6.1 | -2.2 | 55.1 | 822.2 | 652.0 | 342.7 | 1.7 | 1.000208 |
| 12500.0 | 649.0 | 4.7 | -3.1 | 56.5 | 811.3 | 650.4 | 92.9 | 1.3 | 1.000205 |
| 13000.0 | 636.9 | 3.7 | -4.9 | 53.2 | 799.5 | 649.0 | 137.4 | 2.4 | 1.000199 |
| 13500.0 | 625.1 | 2.6 | -6.7 | 49.9 | 787.8 | 647.7 | 153.3 | 3.9 | 1.000194 |
| 14000.0 | 613.4 | 1.6 | -8.6 | 46.6 | 776.3 | 646.4 | 174.6 | 4.9 | 1.000189 |
| 14500.0 | 602.0 | .5 | -10.5 | 43.3 | 765.0 | 645.0 | 189.1 | 5.9 | 1.000184 |
| 15000.0 | 590.7 | -7 | -11.7 | 43.0 | 754.2 | 643.5 | 205.1 | 5.9 | 1.000181 |
| 15500.0 | 579.5 | -2.1 | -12.5 | 44.8 | 743.6 | 641.9 | 217.6 | 6.4 | 1.000178 |
| 16000.0 | 568.6 | -3.2 | -13.4 | 45.0 | 732.6 | 640.6 | 226.1 | 7.2 | 1.000175 |
| 16500.0 | 557.7 | -3.4 | -14.6 | 41.6 | 719.4 | 639.9 | 231.5 | 7.8 | 1.000171 |
| 17000.0 | 547.1 | -3.7 | -15.8 | 38.2 | 706.4 | 639.0 | 235.4 | 8.3 | 1.000167 |
| 17500.0 | 536.7 | -4.7 | -20.1 | 28.7 | 695.7 | 638.6 | 244.0 | 9.2 | 1.000161 |
| 18000.0 | 526.4 | -5.7 | -25.3 | 19.5 | 685.3 | 637.3 | 252.4 | 10.4 | 1.000157 |
| 18500.0 | 516.2 | -6.5 | -17.1 | 42.4 | 673.7 | 636.5 | 250.9 | 11.7 | 1.000159 |
| 19000.0 | 506.3 | -7.3 | -12.7 | 65.3 | 662.3 | 635.8 | 248.5 | 13.0 | 1.000160 |
| 19500.0 | 496.5 | -8.2 | -10.9 | 80.4 | 651.4 | 634.8 | 241.0 | 13.5 | 1.000159 |
| 20000.0 | 486.8 | -9.2 | -11.7 | 81.5 | 641.2 | 633.6 | 234.6 | 14.2 | 1.000156 |
| 20500.0 | 477.3 | -10.2 | -12.6 | 82.6 | 631.2 | 632.3 | 233.4 | 14.9 | 1.000153 |
| 21000.0 | 468.1 | -11.2 | -13.4 | 83.7 | 621.4 | 631.1 | 232.3 | 15.6 | 1.000150 |
| 21500.0 | 458.8 | -12.4 | -14.4 | 84.6 | 612.0 | 629.6 | 232.0 | 16.2 | 1.000147 |
| 22000.0 | 449.8 | -13.7 | -15.6 | 85.5 | 602.9 | 628.0 | 231.6 | 16.7 | 1.000145 |
| 22500.0 | 440.9 | -15.0 | -16.7 | 86.4 | 594.0 | 626.4 | 230.0 | 17.0 | 1.000142 |
| 23000.0 | 432.1 | -15.6 | -18.6 | 77.7 | 583.8 | 625.6 | 228.4 | 17.3 | 1.000138 |
| 23500.0 | 423.5 | -15.4 | -23.5 | 49.5 | 571.9 | 625.7 | 227.7 | 16.7 | 1.000133 |

STATION ALTITUDE 4051.37 FEET MSL
11 SEP. 81 0700 HRS MDT
ASCENSION NO. 201

UPPER AIR DATA
2540100201
LC-37

GEODETIC COORDINATES
32.40175 LAT UEG
106.31232 LON UEG

TABLE 10 CONT

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES (TN) | SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|-------------------------------|---------------------------------------|----------------------|------------------------------|----------------------------|--|----------------|---------------------------|
| 24000.0 | 413.1 | -16.3 | -27.9 | 35.7 | 562.7 | 624.5 | 226.8 | 16.0 | 1.000129 |
| 24500.0 | 400.8 | -17.5 | -27.8 | 39.7 | 553.9 | 623.1 | 224.7 | 14.1 | 1.000127 |
| 25000.0 | 390.6 | -18.6 | -28.1 | 42.7 | 545.2 | 621.7 | 223.1 | 12.4 | 1.000125 |
| 25500.0 | 390.5 | -19.8 | -29.7 | 40.9 | 536.7 | 620.2 | 224.4 | 11.3 | 1.000123 |
| 26000.0 | 382.5 | -21.1 | -31.3 | 39.1 | 528.4 | 618.7 | 225.8 | 11.2 | 1.000120 |
| 26500.0 | 374.8 | -22.3 | -32.9 | 37.3 | 520.2 | 617.1 | 227.0 | 12.4 | 1.000118 |
| 27000.0 | 367.1 | -23.7 | -34.2 | 37.2 | 512.5 | 615.4 | 229.1 | 14.8 | 1.000116 |
| 27500.0 | 359.5 | -25.0 | -33.2 | 46.0 | 504.5 | 613.8 | 231.1 | 18.1 | 1.000115 |
| 28000.0 | 352.1 | -25.5 | -30.6 | 61.9 | 495.0 | 613.3 | 231.3 | 20.4 | 1.000113 |
| 28500.0 | 344.8 | -26.2 | -30.8 | 64.9 | 486.1 | 612.4 | 231.3 | 22.6 | 1.000111 |
| 29000.0 | 337.6 | -27.1 | -32.9 | 57.3 | 477.8 | 611.2 | 232.0 | 27.3 | 1.000109 |
| 29500.0 | 330.5 | -28.3 | -34.7 | 53.9 | 470.2 | 609.6 | 233.0 | 32.1 | 1.000107 |
| 30000.0 | 323.5 | -29.7 | -36.3 | 52.4 | 462.8 | 607.9 | 235.1 | 35.9 | 1.000105 |
| 30500.0 | 316.6 | -31.1 | -37.9 | 50.9 | 455.6 | 606.2 | | | 1.000103 |
| 31000.0 | 309.9 | -32.5 | -39.5 | 49.3 | 448.6 | 604.4 | | | 1.000101 |
| 31500.0 | 303.4 | -33.9 | -41.1 | 47.8 | 441.6 | 602.7 | | | 1.000099 |

STATION ALTITUDE 4051.37 FEET MSL
11 SEP. 81
ASCENSION NO. 201

MANDATORY LEVELS
2540160201
LC-37

CELESTIC COORDINATES
32.40175 LAT DEG
106.51232 LON DEG

TABLE 11

| PRESSURE GEOPOTENTIAL | | TEMPERATURE | | REL. HUM. | | WIN. DATA | |
|-----------------------|--------|------------------------------|----------|-----------|--------------------------|----------------|--|
| MILLIBARS | FEET | AIR DEGREES CENTIGRADE | DEWPOINT | PERCENT | DIRECTION DEGREES(TN) | SPEED KNOTS | |
| 850.0 | 5015. | 20.4 | 13.4 | 64. | 6.6 | 2.9 | |
| 800.0 | 6731. | 18.3 | 8.7 | 54. | 332.7 | 4.5 | |
| 750.0 | 8537. | 15.1 | 4.2 | 48. | 307.4 | 7.3 | |
| 700.0 | 10441. | 10.6 | .1 | 48. | 316.7 | 8.5 | |
| 650.0 | 12447. | 4.8 | -3.0 | 57. | 85.3 | 1.1 | |
| 600.0 | 14573. | .3 | -10.8 | 43. | 191.7 | 5.9 | |
| 550.0 | 16842. | -3.6 | -15.5 | 39. | 234.4 | 8.2 | |
| 500.0 | 19294. | -7.8 | -10.0 | 80. | 243.8 | 13.3 | |
| 450.0 | 21957. | -13.6 | -15.5 | 85. | 231.6 | 16.7 | |
| 400.0 | 24871. | -18.4 | -27.8 | 43. | 222.8 | 12.6 | |
| 350.0 | 28091. | -25.6 | -30.0 | 68. | 231.3 | 21.0 | |
| 300.0 | 31698. | -34.6 | -41.9 | 47. | | | |

SYNOPTIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

SIGNIFICANT LEVEL DATA
25400.0593
WHITE BANDS

STATION ALTITUDE 3980.00 FEET MSL
11 SLP. 01
ASCENSION NO. 593

TABLE 12

| PRESSURE | GEOMETRIC | TEMPERATURE | REL. HUM. |
|-----------|-----------|-------------|-----------|
| MILLIBARS | ALTITUDE | AIR | PERCENT |
| MSL FEET | DEGREES | DEWPOINT | |
| | | CENTIGRADE | |
| 882.0 | 3089.0 | 18.0 | 86.0 |
| 864.4 | 4559.7 | 20.1 | 68.0 |
| 860.0 | 4704.4 | 19.1 | 66.0 |
| 850.0 | 5035.9 | 20.1 | 63.0 |
| 755.8 | 8343.4 | 15.9 | 43.0 |
| 700.0 | 10467.6 | 11.3 | 47.0 |
| 647.0 | 12607.9 | 5.4 | 60.0 |
| 617.2 | 13869.3 | 2.6 | 46.0 |
| 578.0 | 15601.7 | -1.6 | 54.0 |
| 561.0 | 16382.0 | -2.5 | 17.0 |
| 544.8 | 17144.2 | -4.0 | 38.0 |
| 535.2 | 17604.5 | -5.5 | 70.0 |
| 528.6 | 17924.7 | -6.0 | 56.0 |
| 520.6 | 18317.3 | -6.2 | 23.0 |
| 500.0 | 19354.2 | -7.6 | 83.0 |
| 492.8 | 19725.4 | -8.5 | 95.0 |
| 487.2 | 20017.7 | -8.1 | 93.0 |
| 446.5 | 22223.0 | -14.4 | 81.0 |
| 436.6 | 22783.6 | -13.6 | 66.0 |
| 426.2 | 23386.2 | -14.4 | 51.0 |
| 404.2 | 24701.9 | -17.0 | 16.0 |
| 400.0 | 24959.6 | -17.5 | 18.0 |
| 367.8 | 27007.5 | -22.6 | 32.0 |
| 354.0 | 27928.5 | -24.3 | 64.0 |
| 340.6 | 28852.7 | -25.4 | 44.0 |
| 334.0 | 29319.1 | -26.6 | 39.0 |
| 300.0 | 31836.4 | -33.5 | 44.0 |
| 289.6 | 32648.3 | -35.7 | 45.0 |
| 254.2 | 35506.6 | -43.4 | 48.0 |
| 250.0 | 35955.3 | -44.1 | |
| 243.0 | 36580.6 | -45.8 | |
| 200.0 | 40779.1 | -53.7 | |
| 159.4 | 45498.8 | -61.7 | |
| 150.0 | 46736.7 | -62.8 | |
| 142.8 | 47734.4 | -63.5 | |
| 135.0 | 48864.0 | -66.4 | |
| 113.0 | 52393.3 | -69.2 | |
| 100.0 | 54798.7 | -69.8 | |
| 96.6 | 55082.4 | -67.5 | |
| 90.4 | 56000.5 | -67.7 | |

STATION ALTITUDE 3949.00 FEET MSL
 11 SEP. 71 0800 HRS MD
 ASCENSION IS. 393

SIGHT, ANT LEVEL DATA
 25400/0393
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 12 CON'T

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE | | REL. HUM. PERCENT |
|-----------------------|-----------------------------------|----------------|------------------------|----------------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | |
| 70.0 | 61952.9 | -61.9 | | |
| 60.2 | 65051.8 | -59.6 | | |
| 52.6 | 67860.7 | -56.5 | | |
| 50.0 | 68923.6 | -56.5 | | |
| 47.8 | 69863.6 | -58.1 | | |
| 43.8 | 71693.0 | -55.7 | | |

UPPER AIR DATA
2540020593
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL
11 SEP. 61 0800 HRS MDT
ASCENSION NO. 593

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 13

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES (IN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|--|-----------------------------|---------------------------|
| 3989.0 | 882.0 | 18.0 | 86.0 | 1047.3 | 667.3 | 20.0 | 1.0 | 1.000313 |
| 4000.0 | 881.7 | 18.0 | 85.7 | 1046.7 | 667.3 | 20.3 | 1.0 | 1.000313 |
| 4500.0 | 860.2 | 19.9 | 69.9 | 1022.5 | 669.3 | 25.2 | 3.0 | 1.000300 |
| 5000.0 | 851.1 | 20.0 | 63.3 | 1004.7 | 669.2 | 26.2 | 4.9 | 1.000269 |
| 5500.0 | 836.1 | 19.5 | 60.2 | 989.1 | 668.5 | 26.7 | 6.9 | 1.000261 |
| 6000.0 | 821.4 | 18.9 | 57.2 | 974.2 | 667.7 | 27.0 | 7.0 | 1.000273 |
| 6500.0 | 806.9 | 18.2 | 54.1 | 959.6 | 666.8 | 27.6 | 5.9 | 1.000265 |
| 7000.0 | 792.7 | 17.6 | 51.1 | 945.1 | 665.9 | 4.6 | 4.3 | 1.000257 |
| 7500.0 | 776.8 | 17.0 | 48.1 | 930.9 | 665.1 | 32.6 | 4.3 | 1.000249 |
| 8000.0 | 765.1 | 16.3 | 45.1 | 916.9 | 664.2 | 32.7 | 5.6 | 1.000242 |
| 8500.0 | 751.5 | 15.6 | 43.3 | 903.3 | 663.2 | 32.1 | 6.9 | 1.000236 |
| 9000.0 | 736.1 | 14.5 | 44.2 | 890.6 | 661.9 | 33.9 | 7.9 | 1.000232 |
| 9500.0 | 724.9 | 13.4 | 45.2 | 878.1 | 660.7 | 33.4 | 8.6 | 1.000228 |
| 10000.0 | 711.9 | 12.3 | 46.1 | 865.7 | 659.4 | 33.6 | 8.3 | 1.000224 |
| 10500.0 | 699.2 | 11.2 | 47.2 | 853.6 | 658.1 | 33.4 | 7.6 | 1.000224 |
| 11000.0 | 686.4 | 9.8 | 50.2 | 842.2 | 656.5 | 32.9 | 6.4 | 1.000217 |
| 11500.0 | 673.9 | 8.5 | 53.3 | 830.9 | 654.8 | 33.0 | 4.8 | 1.000213 |
| 12000.0 | 661.6 | 7.1 | 56.3 | 819.8 | 653.2 | 34.0 | 3.0 | 1.000210 |
| 12500.0 | 649.6 | 5.7 | 59.3 | 808.9 | 651.6 | 34.7 | 1.0 | 1.000207 |
| 13000.0 | 637.6 | 4.5 | 55.6 | 797.7 | 650.1 | 15.6 | 1.1 | 1.000201 |
| 13500.0 | 625.8 | 3.4 | 50.1 | 786.4 | 648.7 | 19.4 | 2.6 | 1.000195 |
| 14000.0 | 614.2 | 2.3 | 46.6 | 775.2 | 647.2 | 20.2 | 4.3 | 1.000189 |
| 14500.0 | 602.6 | 1.1 | 48.9 | 764.0 | 645.8 | 21.0 | 5.1 | 1.000186 |
| 15000.0 | 591.3 | -1.1 | 51.2 | 753.0 | 644.3 | 21.2 | 5.8 | 1.000184 |
| 15500.0 | 580.2 | -1.4 | 53.5 | 742.3 | 642.9 | 21.9 | 6.1 | 1.000181 |
| 16000.0 | 569.3 | -2.1 | 35.1 | 730.6 | 641.8 | 22.1 | 6.4 | 1.000172 |
| 16500.0 | 558.5 | -2.7 | 20.3 | 718.9 | 640.9 | 22.8 | 7.1 | 1.000165 |
| 17000.0 | 547.8 | -3.7 | 34.0 | 707.5 | 639.8 | 23.1 | 8.0 | 1.000166 |
| 17500.0 | 537.4 | -5.2 | 62.7 | 697.2 | 638.3 | 24.0 | 9.0 | 1.000169 |
| 18000.0 | 527.1 | -6.0 | 49.7 | 686.4 | 637.2 | 24.5 | 10.1 | 1.000163 |
| 18500.0 | 516.9 | -6.4 | 33.6 | 674.6 | 636.5 | 24.2 | 11.7 | 1.000157 |
| 19000.0 | 506.9 | -7.1 | 62.5 | 662.7 | 635.9 | 23.7 | 13.6 | 1.000160 |
| 19500.0 | 497.2 | -8.0 | 87.7 | 651.6 | 635.1 | 23.1 | 15.5 | 1.000161 |
| 20000.0 | 487.5 | -8.1 | 93.1 | 639.3 | 635.0 | 22.6 | 17.3 | 1.000159 |
| 20500.0 | 478.0 | -9.5 | 90.4 | 630.2 | 633.3 | 23.8 | 17.2 | 1.000155 |
| 21000.0 | 468.6 | -10.9 | 87.7 | 621.4 | 631.5 | 22.9 | 16.1 | 1.000151 |
| 21500.0 | 459.5 | -12.3 | 84.9 | 612.7 | 629.7 | 22.0 | 14.8 | 1.000148 |
| 22000.0 | 450.5 | -13.8 | 82.2 | 604.1 | 627.9 | 22.1 | 13.5 | 1.000144 |
| 22500.0 | 441.6 | -14.0 | 73.6 | 592.8 | 627.6 | 22.3 | 13.5 | 1.000141 |
| 23000.0 | 432.8 | -13.9 | 60.6 | 580.9 | 627.6 | 22.7 | 13.6 | 1.000137 |

STATION ALTITUDE 3989.00 FEET MSL
11 SEP. 61
ASCENSION NO. 393

UPPER AIR DATA
2540020593
WHITE SANDS

MODEMIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 13 CONT

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CELSIUS | TEMPERATURE DEWPOINT DEGREES CELSIUS | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION, DEGREES (TN) | SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|--|---|----------------------|------------------------------|----------------------------|---|----------------|---------------------------|
| 23500.0 | 424.3 | -14.6 | -23.2 | 48.0 | 571.2 | 626.7 | 227.1 | 13.6 | 1.000133 |
| 24000.0 | 413.8 | -15.6 | -27.6 | 34.7 | 562.1 | 623.4 | 230.5 | 13.7 | 1.000129 |
| 24500.0 | 407.5 | -16.6 | -33.5 | 21.4 | 553.2 | 624.1 | 235.3 | 13.1 | 1.000125 |
| 25000.0 | 399.3 | -17.6 | -35.9 | 18.3 | 544.2 | 622.9 | 240.7 | 12.6 | 1.000123 |
| 25500.0 | 391.2 | -18.8 | -35.3 | 21.7 | 535.8 | 621.3 | 242.8 | 11.9 | 1.000121 |
| 26000.0 | 383.3 | -20.1 | -34.9 | 25.1 | 527.5 | 619.8 | 244.7 | 11.1 | 1.000119 |
| 26500.0 | 375.5 | -21.3 | -34.7 | 28.5 | 519.4 | 618.3 | 242.5 | 12.7 | 1.000118 |
| 27000.0 | 367.9 | -22.6 | -34.7 | 31.9 | 511.3 | 616.8 | 240.3 | 14.6 | 1.000116 |
| 27500.0 | 360.4 | -23.5 | -31.2 | 49.1 | 502.6 | 615.7 | 239.2 | 16.7 | 1.000115 |
| 28000.0 | 352.9 | -24.4 | -29.5 | 62.5 | 494.0 | 614.6 | 236.6 | 23.1 | 1.000113 |
| 28500.0 | 345.7 | -25.0 | -32.0 | 51.6 | 485.0 | 613.9 | 238.5 | 26.3 | 1.000111 |
| 29000.0 | 338.5 | -25.8 | -34.7 | 42.4 | 476.5 | 612.8 | 238.5 | 29.3 | 1.000108 |
| 29500.0 | 331.4 | -27.1 | -36.7 | 39.4 | 469.1 | 611.2 | 236.8 | 31.9 | 1.000106 |
| 30000.0 | 324.4 | -28.5 | -37.7 | 40.4 | 461.8 | 609.5 | 238.6 | 34.5 | 1.000104 |
| 30500.0 | 317.6 | -29.8 | -38.7 | 41.3 | 454.6 | 607.8 | 232.8 | 36.2 | 1.000103 |
| 31000.0 | 310.9 | -31.2 | -39.7 | 42.3 | 447.5 | 606.0 | 230.9 | 37.5 | 1.000101 |
| 31500.0 | 304.3 | -32.6 | -40.8 | 43.3 | 440.6 | 604.3 | 230.0 | 38.4 | 1.000099 |
| 32000.0 | 297.9 | -33.9 | -41.9 | 44.2 | 433.7 | 602.6 | 229.9 | 39.2 | 1.000098 |
| 32500.0 | 291.5 | -35.3 | -43.0 | 44.8 | 426.8 | 600.9 | 229.9 | 40.6 | 1.000096 |
| 33000.0 | 285.1 | -36.6 | -44.1 | 45.4 | 419.9 | 599.2 | 230.1 | 42.8 | 1.000094 |
| 33500.0 | 278.9 | -37.9 | -45.2 | 45.9 | 412.9 | 597.5 | 229.8 | 45.1 | 1.000093 |
| 34000.0 | 272.7 | -39.2 | -46.3 | 46.4 | 406.1 | 595.9 | 228.5 | 47.4 | 1.000091 |
| 34500.0 | 266.8 | -40.6 | -47.5 | 46.9 | 399.5 | 594.2 | 227.4 | 49.7 | 1.000090 |
| 35000.0 | 260.9 | -41.9 | -48.6 | 47.4 | 392.9 | 592.5 | 228.3 | 49.8 | 1.000088 |
| 35500.0 | 255.2 | -43.2 | -49.7 | 47.9 | 386.5 | 590.8 | 229.2 | 50.0 | 1.000087 |
| 36000.0 | 249.5 | -44.2 | | | 379.7 | 589.4 | 232.5 | 47.1 | 1.000085 |
| 36500.0 | 243.9 | -45.6 | | | 373.4 | 587.7 | 236.7 | 43.9 | 1.000083 |
| 37000.0 | 238.3 | -46.6 | | | 366.4 | 586.4 | 240.2 | 40.7 | 1.000082 |
| 37500.0 | 232.9 | -47.5 | | | 359.5 | 585.2 | 243.8 | 37.7 | 1.000080 |
| 38000.0 | 227.5 | -48.5 | | | 352.8 | 584.0 | 244.8 | 36.3 | 1.000079 |
| 38500.0 | 222.3 | -49.4 | | | 346.1 | 582.7 | 244.7 | 35.5 | 1.000077 |
| 39000.0 | 217.2 | -50.4 | | | 339.6 | 581.5 | 243.5 | 36.2 | 1.000076 |
| 39500.0 | 212.2 | -51.3 | | | 333.2 | 580.3 | 242.2 | 37.1 | 1.000074 |
| 40000.0 | 207.4 | -52.2 | | | 327.0 | 579.0 | 242.0 | 36.0 | 1.000073 |
| 40500.0 | 202.6 | -53.2 | | | 320.9 | 577.8 | 243.0 | 34.8 | 1.000071 |
| 41000.0 | 197.9 | -54.1 | | | 314.7 | 576.6 | 242.1 | 32.7 | 1.000070 |
| 41500.0 | 193.2 | -54.9 | | | 308.4 | 575.5 | 240.7 | 30.3 | 1.000069 |
| 42000.0 | 188.6 | -55.8 | | | 302.2 | 574.4 | 238.4 | 29.0 | 1.000067 |
| 42500.0 | 184.1 | -56.6 | | | 296.2 | 573.3 | 235.7 | 28.3 | 1.000066 |
| 43000.0 | 179.7 | -57.5 | | | 290.3 | 572.1 | 233.3 | 28.7 | 1.000065 |

STATION ALTITUDE 3989.00 FEET MSL
11 SEP. 61
ASCENSION NO. 593

UPPER AIR DATA
2540020593
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 13 CONT

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION, DEGREES (TN) | WIND SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|---|------------------------|---------------------------|
| 43500.0 | 175.5 | -58.3 | | 284.5 | 571.0 | 237.0 | 30.1 | 1.000063 |
| 44000.0 | 171.3 | -59.2 | | 278.9 | 569.9 | 238.6 | 31.4 | 1.000062 |
| 44500.0 | 167.2 | -60.0 | | 273.3 | 568.8 | 240.2 | 32.5 | 1.000061 |
| 45000.0 | 163.3 | -60.9 | | 267.9 | 567.6 | 242.1 | 32.7 | 1.000060 |
| 45500.0 | 159.4 | -61.7 | | 262.6 | 566.5 | 245.3 | 30.9 | 1.000058 |
| 46000.0 | 155.5 | -62.1 | | 256.8 | 565.9 | 248.8 | 29.2 | 1.000057 |
| 46500.0 | 151.8 | -62.6 | | 251.1 | 565.3 | 252.7 | 26.9 | 1.000056 |
| 47000.0 | 148.1 | -63.0 | | 245.4 | 564.8 | 257.3 | 24.6 | 1.000055 |
| 47500.0 | 144.5 | -63.3 | | 239.9 | 564.3 | 257.7 | 22.5 | 1.000053 |
| 48000.0 | 140.9 | -64.2 | | 234.9 | 563.2 | 255.5 | 20.5 | 1.000052 |
| 48500.0 | 137.5 | -65.5 | | 230.6 | 561.4 | 251.6 | 18.8 | 1.000051 |
| 49000.0 | 134.1 | -66.5 | | 226.0 | 560.0 | 245.2 | 17.4 | 1.000050 |
| 49500.0 | 130.7 | -68.9 | | 220.8 | 559.5 | 237.9 | 16.3 | 1.000049 |
| 50000.0 | 127.5 | -67.3 | | 215.8 | 558.9 | 230.4 | 15.6 | 1.000048 |
| 50500.0 | 124.3 | -67.7 | | 210.8 | 558.4 | 222.3 | 15.2 | 1.000047 |
| 51000.0 | 121.2 | -68.1 | | 205.9 | 557.9 | 217.1 | 15.4 | 1.000046 |
| 51500.0 | 118.2 | -68.5 | | 201.2 | 557.3 | 212.2 | 15.7 | 1.000045 |
| 52000.0 | 115.3 | -68.9 | | 196.6 | 556.8 | 208.2 | 16.1 | 1.000044 |
| 52500.0 | 112.4 | -69.2 | | 192.0 | 556.3 | 204.7 | 16.5 | 1.000043 |
| 53000.0 | 109.6 | -69.4 | | 187.3 | 556.2 | 203.6 | 16.6 | 1.000042 |
| 53500.0 | 106.8 | -69.5 | | 182.7 | 556.0 | 209.1 | 15.5 | 1.000041 |
| 54000.0 | 104.1 | -69.6 | | 178.2 | 555.8 | 215.3 | 14.6 | 1.000040 |
| 54500.0 | 101.5 | -69.7 | | 173.9 | 555.6 | 214.1 | 9.1 | 1.000039 |
| 55000.0 | 99.0 | -69.1 | | 169.0 | 556.5 | 203.8 | 3.1 | 1.000038 |
| 55500.0 | 96.5 | -67.5 | | 163.5 | 558.7 | 99.6 | 1.9 | 1.000036 |
| 56000.0 | 94.1 | -67.6 | | 159.5 | 558.6 | 89.1 | 4.3 | 1.000036 |
| 56500.0 | 91.8 | -67.7 | | 155.6 | 558.5 | 87.9 | 6.2 | 1.000035 |
| 57000.0 | 89.5 | -67.5 | | 151.6 | 558.7 | 104.6 | 4.7 | 1.000034 |
| 57500.0 | 87.3 | -66.9 | | 147.5 | 559.5 | 131.8 | 3.9 | 1.000033 |
| 58000.0 | 85.2 | -66.3 | | 143.5 | 560.2 | 114.1 | 4.9 | 1.000032 |
| 58500.0 | 83.1 | -65.8 | | 139.6 | 561.0 | 95.3 | 7.1 | 1.000031 |
| 59000.0 | 81.1 | -65.2 | | 135.8 | 561.4 | 85.5 | 9.4 | 1.000030 |
| 59500.0 | 79.1 | -64.7 | | 132.1 | 562.5 | 78.5 | 11.2 | 1.000029 |
| 60000.0 | 77.1 | -64.1 | | 128.5 | 563.3 | 73.7 | 13.1 | 1.000029 |
| 60500.0 | 75.2 | -63.5 | | 125.0 | 564.0 | 79.2 | 14.5 | 1.000028 |
| 61000.0 | 73.4 | -63.0 | | 121.6 | 564.8 | 83.7 | 16.0 | 1.000027 |
| 61500.0 | 71.6 | -62.4 | | 118.3 | 565.5 | 89.5 | 17.0 | 1.000026 |
| 62000.0 | 69.8 | -61.9 | | 115.2 | 566.3 | 96.8 | 17.7 | 1.000026 |
| 62500.0 | 68.2 | -61.5 | | 112.2 | 566.8 | 105.4 | 18.7 | 1.000025 |
| 63000.0 | 66.5 | -61.1 | | 109.3 | 567.3 | 105.5 | 18.2 | 1.000024 |

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

UPPER AIR DATA
2540020593
WHITE SANDS

TABLE 13 CONT

STATION ALTITUDE 3983.00 FEET MSL
11 SEP. 81 0800 HRS MDT
ASCENSION NO. 593

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES (TN) | SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|--|----------------|---------------------------|
| 63500.0 | 64.9 | -60.8 | | 106.5 | 567.8 | 107.3 | 17.6 | 1.000024 |
| 64000.0 | 63.4 | -60.4 | | 103.7 | 568.3 | 109.0 | 16.6 | 1.000023 |
| 64500.0 | 61.8 | -60.0 | | 101.1 | 568.8 | 110.1 | 14.6 | 1.000023 |
| 65000.0 | 60.4 | -59.6 | | 98.5 | 569.3 | 111.7 | 12.7 | 1.000022 |
| 65500.0 | 58.9 | -59.1 | | 95.9 | 570.0 | 112.1 | 11.5 | 1.000021 |
| 66000.0 | 57.5 | -58.6 | | 93.4 | 570.7 | 111.5 | 10.9 | 1.000021 |
| 66500.0 | 56.2 | -58.0 | | 90.9 | 571.4 | 110.7 | 10.3 | 1.000020 |
| 67000.0 | 54.8 | -57.4 | | 88.5 | 572.2 | 109.7 | 11.0 | 1.000020 |
| 67500.0 | 53.5 | -56.9 | | 86.2 | 572.9 | 108.6 | 12.1 | 1.000019 |
| 68000.0 | 52.3 | -56.5 | | 84.0 | 573.4 | 96.3 | 13.4 | 1.000019 |
| 68500.0 | 51.0 | -56.5 | | 82.0 | 573.4 | 92.6 | 13.8 | 1.000018 |
| 69000.0 | 49.8 | -56.6 | | 80.2 | 573.3 | 89.1 | 14.3 | 1.000018 |
| 69500.0 | 48.6 | -57.5 | | 78.6 | 572.1 | | | 1.000017 |
| 70000.0 | 47.5 | -57.9 | | 76.9 | 571.5 | | | 1.000017 |
| 70500.0 | 46.4 | -57.3 | | 74.8 | 572.4 | | | 1.000017 |
| 71000.0 | 45.3 | -56.6 | | 72.8 | 573.3 | | | 1.000016 |
| 71500.0 | 44.2 | -56.0 | | 70.9 | 574.1 | | | 1.000016 |

STATION ALTITUDE 3989.00 FEET SL
11 SEP. 61
ASCENSION NO. 593

MANDATORY LEVELS
2540020593
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 14

| PRESSURE GEOPOTENTIAL | | TEMPERATURE | | REL. HUM. PERCENT | WIND DATA | |
|-----------------------|--------|----------------|------------------------|----------------------|--------------------------|----------------|
| MILLIBARS | FEET | AIR DEGREES | DEWPOINT CENTIGRADE | | DIRECTION DEGREES(TN) | SPEED KNOTS |
| 850.0 | 5032. | 20.1 | 12.8 | 63. | 26.3 | 7.0 |
| 800.0 | 6744. | 17.9 | 8.1 | 53. | 20.5 | 7.1 |
| 750.0 | 8551. | 15.4 | 3.1 | 43. | 323.4 | 7.0 |
| 700.0 | 10457. | 11.3 | .4 | 47. | 334.4 | 7.6 |
| 650.0 | 12470. | 5.7 | -1.0 | 59. | 347.1 | 1.1 |
| 600.0 | 14601. | .8 | -8.6 | 49. | 212.2 | 5.2 |
| 550.0 | 16875. | -3.5 | -18.1 | 31. | 233.8 | 7.8 |
| 500.0 | 19327. | -7.6 | -10.0 | 43. | 233.5 | 15.0 |
| 450.0 | 21994. | -13.8 | -16.2 | 42. | 221.1 | 13.4 |
| 400.0 | 24917. | -17.5 | -36.0 | 18. | 240.1 | 12.6 |
| 350.0 | 28149. | -24.6 | -30.5 | 58. | 238.5 | 24.4 |
| 300.0 | 31772. | -33.5 | -41.5 | 44. | 229.9 | 36.9 |
| 250.0 | 35676. | -44.1 | | | 232.0 | 47.5 |
| 200.0 | 40679. | -53.7 | | | 242.8 | 33.8 |
| 175.0 | 43465. | -58.4 | | | 237.2 | 30.3 |
| 150.0 | 46609. | -62.8 | | | 254.6 | 25.9 |
| 125.0 | 50250. | -67.6 | | | 224.4 | 15.2 |
| 100.0 | 54628. | -69.8 | | | 211.1 | 5.8 |
| 80.0 | 59047. | -64.9 | | | 82.2 | 10.1 |
| 70.0 | 61739. | -61.9 | | | 95.7 | 17.6 |
| 60.0 | 64885. | -59.5 | | | 112.0 | 12.4 |
| 50.0 | 68662. | -56.5 | | | 89.8 | 14.2 |

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

GEODLTIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

SIGNIFICANT LEVEL DATA
25401.0202
LC-37

STATION ALTITUDE 4051.37 FEET MSL
11 SEP. 61 0904 HRS MDI
ASCENSION NO. 202

TABLE 15

| PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET | TEMPERATURE | | REL. HUM. PERCENT |
|--|----------------|------------------------|----------------------|
| | AIR DEGREES | DEWPOINT CENTIGRADE | |
| 800.7 | 19.5 | 14.5 | 73.0 |
| 850.0 | 21.0 | 12.4 | 58.0 |
| 792.8 | 17.5 | 8.9 | 57.0 |
| 773.2 | 16.8 | 4.6 | 45.0 |
| 754.0 | 16.3 | 2.0 | 38.0 |
| 734.8 | 14.5 | 1.1 | 40.0 |
| 700.0 | 11.0 | -1.4 | 42.0 |
| 614.0 | 1.6 | -4.3 | 65.0 |
| 605.2 | .8 | -7.7 | 53.0 |
| 596.2 | -.2 | -7.0 | 60.0 |
| 558.4 | -3.2 | -25.4 | 16.0 |
| 544.6 | -4.7 | -24.2 | 20.0 |
| 528.0 | -6.6 | -18.2 | 39.0 |
| 519.8 | -6.3 | -18.2 | 45.0 |
| 511.6 | -7.5 | -12.9 | 65.0 |
| 500.0 | -7.9 | -9.1 | 91.0 |
| 453.8 | -12.5 | -16.6 | 71.0 |
| 445.8 | -12.7 | -19.0 | 59.0 |
| 423.0 | -14.4 | -32.9 | 19.0 |
| 400.0 | -17.5 | -39.2 | 13.0 |
| 386.6 | -19.8 | -39.7 | 15.0 |
| 365.2 | -23.2 | -30.6 | 28.0 |
| 351.4 | -24.8 | -29.6 | 63.0 |
| 331.2 | -27.5 | -35.5 | 46.0 |
| 317.8 | -29.6 | -36.3 | 52.0 |
| 311.4 | -31.1 | -35.0 | 68.0 |
| 300.0 | -33.6 | -39.6 | 53.0 |

STATION ALTITUDE 4051.37 FEET MSL
11 SEP 61 0904 HRS MDT
ASCENSION NO. 202

UPPER AIR DATA
234013020
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 16

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | AIR TEMPERATURE DEGREES CENTIGRADE | RELATIVE HUMIDITY PERCENT | DENSITY GM/CM ³ MLTER | SPEED OF SOUND KNOTS | DIRECTION DEGREES (TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|---------------------------------------|------------------------------|--|----------------------------|---------------------------|-----------------------------|---------------------------|
| 4051.4 | 880.7 | 19.5 | 73.0 | 1040.4 | 668.4 | 0 | 0 | 1.000305 |
| 4500.0 | 860.9 | 20.2 | 66.3 | 1022.6 | 669.5 | 32.4 | .9 | 1.000297 |
| 5000.0 | 851.8 | 20.9 | 58.9 | 1002.5 | 670.2 | 32.4 | 1.9 | 1.000267 |
| 5500.0 | 830.9 | 20.2 | 57.8 | 987.6 | 669.3 | 32.4 | 2.9 | 1.000260 |
| 6000.0 | 822.2 | 19.3 | 57.5 | 973.5 | 668.2 | 32.1 | 3.5 | 1.000274 |
| 6500.0 | 807.8 | 18.4 | 57.3 | 959.6 | 667.1 | 30.5 | 2.8 | 1.000268 |
| 7000.0 | 793.7 | 17.6 | 57.0 | 945.9 | 666.1 | 9.6 | 2.5 | 1.000262 |
| 7500.0 | 779.7 | 17.0 | 49.0 | 931.7 | 665.2 | 342.6 | 3.2 | 1.000250 |
| 8000.0 | 765.9 | 16.6 | 42.3 | 917.1 | 664.5 | 330.2 | 4.2 | 1.000241 |
| 8500.0 | 752.3 | 16.1 | 38.2 | 902.7 | 663.8 | 323.3 | 5.2 | 1.000233 |
| 9000.0 | 736.9 | 14.9 | 39.6 | 890.6 | 662.3 | 326.8 | 6.0 | 1.000229 |
| 9500.0 | 723.7 | 13.6 | 40.5 | 878.7 | 660.8 | 331.6 | 6.7 | 1.000225 |
| 10000.0 | 712.7 | 12.3 | 41.3 | 867.0 | 659.2 | 330.0 | 6.7 | 1.000221 |
| 10500.0 | 699.9 | 11.0 | 42.0 | 855.5 | 657.7 | 328.3 | 5.9 | 1.000217 |
| 11000.0 | 687.0 | 9.7 | 45.3 | 843.7 | 656.1 | 325.7 | 4.4 | 1.000214 |
| 11500.0 | 674.4 | 8.3 | 48.5 | 832.2 | 654.6 | 323.6 | 2.4 | 1.000211 |
| 12000.0 | 662.0 | 7.0 | 51.8 | 820.8 | 653.0 | 277.2 | .1 | 1.000208 |
| 12500.0 | 649.9 | 5.7 | 55.0 | 809.6 | 651.5 | 136.3 | 2.5 | 1.000205 |
| 13000.0 | 637.9 | 4.3 | 58.3 | 798.6 | 649.9 | 134.7 | 5.1 | 1.000202 |
| 13500.0 | 626.2 | 3.0 | 61.5 | 787.7 | 648.3 | 139.4 | 5.3 | 1.000199 |
| 14000.0 | 614.7 | 1.7 | 64.8 | 777.0 | 646.7 | 146.8 | 5.2 | 1.000196 |
| 14500.0 | 603.2 | .6 | 54.5 | 766.0 | 645.3 | 183.4 | 3.8 | 1.000188 |
| 15000.0 | 591.9 | -5.5 | 55.1 | 754.8 | 643.9 | 214.1 | 4.0 | 1.000185 |
| 15500.0 | 580.7 | -1.4 | 42.3 | 743.3 | 642.7 | 223.4 | 3.9 | 1.000178 |
| 16000.0 | 569.7 | -2.3 | 29.4 | 731.9 | 641.5 | 224.0 | 3.9 | 1.000171 |
| 16500.0 | 558.9 | -3.2 | 16.6 | 720.8 | 640.3 | 219.5 | 4.0 | 1.000165 |
| 17000.0 | 548.2 | -4.3 | 18.9 | 710.0 | 639.0 | 233.9 | 5.5 | 1.000163 |
| 17500.0 | 537.7 | -5.5 | 27.8 | 699.3 | 637.6 | 241.0 | 7.3 | 1.000162 |
| 18000.0 | 527.4 | -6.6 | 39.4 | 688.5 | 636.4 | 241.0 | 9.2 | 1.000161 |
| 18500.0 | 517.2 | -6.7 | 51.2 | 675.2 | 635.4 | 240.5 | 11.0 | 1.000161 |
| 19000.0 | 507.3 | -7.6 | 74.7 | 664.3 | 635.4 | 239.4 | 12.6 | 1.000162 |
| 19500.0 | 497.4 | -8.1 | 89.9 | 652.4 | 634.9 | 236.9 | 13.8 | 1.000161 |
| 20000.0 | 487.7 | -9.1 | 85.9 | 642.1 | 633.7 | 231.6 | 14.5 | 1.000157 |
| 20500.0 | 478.2 | -10.0 | 81.8 | 631.9 | 632.5 | 225.5 | 14.9 | 1.000154 |
| 21000.0 | 468.9 | -10.9 | 77.7 | 621.4 | 631.4 | 216.9 | 15.0 | 1.000150 |
| 21500.0 | 459.7 | -11.9 | 73.7 | 612.1 | 630.2 | 213.3 | 14.4 | 1.000146 |
| 22000.0 | 450.7 | -12.6 | 66.4 | 601.8 | 629.3 | 214.6 | 12.9 | 1.000143 |
| 22500.0 | 441.8 | -13.0 | 52.2 | 591.0 | 628.7 | 213.7 | 11.7 | 1.000138 |
| 23000.0 | 433.1 | -13.6 | 37.0 | 581.0 | 627.8 | 227.7 | 10.9 | 1.000134 |
| 23500.0 | 424.5 | -14.3 | 21.8 | 571.1 | 626.9 | 234.3 | 10.9 | 1.000130 |

STATION ALTITUDE 4051.37 FEET MSL
11 SEP. 61 0904 HRS MDT
ASCENSION: 10. 202

UPPER AIR DATA
25401.0202
LC-37

TABLE 16 CONT

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES DELMPOINT CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION, DEGREES (TN) | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|---|----------------|---------------------------|
| 24000.0 | 410.1 | -15.3 | 17.2 | 562.0 | 625.0 | 239.8 | 11.1 | 1.000127 |
| 24500.0 | 407.8 | -16.4 | 15.1 | 553.2 | 624.3 | 240.9 | 11.6 | 1.000125 |
| 25000.0 | 399.6 | -17.6 | 13.1 | 544.6 | 622.9 | 241.5 | 12.0 | 1.000122 |
| 25500.0 | 391.6 | -18.9 | 14.3 | 536.5 | 621.2 | 240.6 | 12.0 | 1.000121 |
| 26000.0 | 383.6 | -20.3 | 16.8 | 528.4 | 619.6 | 239.8 | 12.3 | 1.000119 |
| 26500.0 | 375.8 | -21.5 | 21.5 | 520.1 | 618.1 | 239.2 | 13.2 | 1.000117 |
| 27000.0 | 368.1 | -22.7 | 26.2 | 512.0 | 616.0 | 238.3 | 14.8 | 1.000116 |
| 27500.0 | 360.6 | -23.7 | 39.5 | 503.4 | 615.4 | 236.9 | 18.1 | 1.000113 |
| 28000.0 | 353.2 | -24.6 | 58.5 | 494.7 | 614.4 | 235.1 | 19.6 | 1.000111 |
| 28500.0 | 345.8 | -25.5 | 58.4 | 486.3 | 613.2 | 228.9 | 15.4 | 1.000111 |
| 29000.0 | 338.7 | -26.5 | 52.4 | 478.1 | 612.0 | 208.7 | 9.7 | 1.000109 |
| 29500.0 | 331.6 | -27.4 | 46.4 | 470.0 | 610.8 | 119.6 | 11.1 | 1.000107 |
| 30000.0 | 324.7 | -28.5 | 48.9 | 462.2 | 609.4 | 100.5 | 19.1 | 1.000105 |
| 30500.0 | 317.9 | -29.6 | 52.0 | 454.5 | 608.1 | 101.9 | 17.1 | 1.000103 |
| 31000.0 | 311.2 | -31.2 | 67.7 | 447.8 | 606.1 | | | 1.000102 |
| 31500.0 | 304.5 | -32.6 | 59.0 | 440.9 | 604.3 | | | 1.000100 |

STATION ALTITUDE 4051.37 FEET MSL
 11 SEP 61
 ASCENSION NO. 202

MANDATORY LEVELS
 2540100202
 LC-37

..20DLTIC COORDINATES
 32.40175 LAT DEG
 106.31232 LONG DEG

TABLE 17

| PRESSURE GEOPOTENTIAL | | TEMPERATURE | | REL. HUM. PERCENT | WIND, DATA | |
|-----------------------|--------|----------------|------------------------|----------------------|--------------------------|----------------|
| MILLIBARS | FEET | AIR DEGREES | DEWPOINT CENTIGRADE | | DIRECTION DEGREES(TN) | SPEED KNOTS |
| 850.0 | 5056. | 21.0 | 12.4 | 58. | 32.4 | 2.0 |
| 800.0 | 6771. | 18.0 | 9.4 | 57. | 25.9 | 2.4 |
| 750.0 | 8578. | 15.9 | 1.0 | 38. | 324.2 | 5.3 |
| 700.0 | 10485. | 11.0 | -1.4 | 42. | 328.3 | 8.0 |
| 650.0 | 12495. | 5.7 | -2.0 | 55. | 136.3 | 2.5 |
| 600.0 | 14624. | .2 | -7.3 | 57. | 195.8 | 3.8 |
| 550.0 | 16895. | -4.1 | -24.6 | 18. | 231.0 | 5.1 |
| 500.0 | 19342. | -7.9 | -9.1 | 91. | 238.5 | 13.6 |
| 450.0 | 22007. | -12.6 | -17.7 | 65. | 214.7 | 12.8 |
| 400.0 | 24935. | -17.5 | -30.2 | 13. | 241.5 | 12.0 |
| 350.0 | 28164. | -25.0 | -30.1 | 62. | 232.9 | 17.9 |
| 300.0 | 31783. | -33.6 | -39.6 | 53. | | |

END

DATE
FILMED

11-81

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